

must be labeled or marked by the manufacturer with its Underwriters' Laboratories rating.

(3) *Visual Indicators.* The fire extinguisher must be designed, constructed, and maintained to permit visual determination of whether it is fully charged.

(4) *Condition, location, and mounting.* The fire extinguisher(s) must be filled and located so that it is readily accessible for use. The extinguisher(s) must be securely mounted to prevent sliding, rolling, or vertical movement relative to the motor vehicle.

(5) *Extinguishing agents.* The fire extinguisher must use an extinguishing agent that does not need protection from freezing. Extinguishing agents must comply with the toxicity provisions of the Environmental Protection Agency's Significant New Alternatives Policy (SNAP) regulations under 40 CFR Part 82, Subpart G.

(6) *Exception.* This paragraph (a) does not apply to the driven unit in a driveaway-towaway operation.

(b) *Spare fuses.* Power units for which fuses are needed to operate any required parts and accessories must have at least one spare fuse for each type/size of fuse needed for those parts and accessories.

(c)–(e) [Reserved]

(f) *Warning devices for stopped vehicles.* Except as provided in paragraph (g) of this section, one of the following options must be used:

(1) Three bidirectional emergency reflective triangles that conform to the requirements of Federal Motor Vehicle Safety Standard No. 125, § 571.125 of this title; or

(2) At least 6 fusees or 3 liquid-burning flares. The vehicle must have as many additional fusees or liquid-burning flares as are necessary to satisfy the requirements of § 392.22.

(3) Other warning devices may be used in addition to, but not in lieu of, the required warning devices, provided those warning devices do not decrease the effectiveness of the required warning devices.

(g) *Restrictions on the use of flame-producing devices.* Liquid-burning flares, fusees, oil lanterns, or any signal produced by a flame shall not be carried on any commercial motor vehicle transporting Division 1.1, 1.2, 1.3 (ex-

plosives) hazardous materials; any cargo tank motor vehicle used for the transportation of Division 2.1 (flammable gas) or Class 3 (flammable liquid) hazardous materials whether loaded or empty; or any commercial motor vehicle using compressed gas as a motor fuel.

(h)–(i) [Reserved]

(j) *Requirements for fusees and liquid-burning flares.* Each fusee shall be capable of burning for 30 minutes, and each liquid-burning flare shall contain enough fuel to burn continuously for at least 60 minutes. Fusees and liquid-burning flares shall conform to the requirements of Underwriters Laboratories, Inc., UL No. 912, Highway Emergency Signals, Fourth Edition, July 30, 1979, (with an amendment dated November 9, 1981). (See § 393.7 for information on the incorporation by reference and availability of this document.) Each fusee and liquid-burning flare shall be marked with the UL symbol in accordance with the requirements of UL 912.

(k) *Requirements for red flags.* Red flags shall be not less than 12 inches square, with standards adequate to maintain the flags in an upright position.

(49 U.S.C. 304, 1655; 49 CFR 1.48(b) and 301.60) [33 FR 19735, Dec. 25, 1968, as amended at 35 FR 13019, Aug. 15, 1970; 35 FR 14619, Sept. 18, 1970; 37 FR 17176, Aug. 25, 1972; 40 FR 10685, Mar. 7, 1975; 41 FR 53031, Dec. 3, 1976; 47 FR 47837, Oct. 28, 1982; 59 FR 34712, July 6, 1994; 67 FR 61225, Sept. 27, 2002; 70 FR 48054, Aug. 15, 2005; 72 FR 44036, Aug. 7, 2007; 78 FR 58484, Sept. 24, 2013]

Subpart I—Protection Against Shifting and Falling Cargo

SOURCE: 67 FR 61225, Sept. 27, 2002, unless otherwise noted.

§ 393.100 Which types of commercial motor vehicles are subject to the cargo securement standards of this subpart, and what general requirements apply?

(a) *Applicability.* The rules in this subpart are applicable to trucks, truck tractors, semitrailers, full trailers, and pole trailers.

(b) *Prevention against loss of load.* Each commercial motor vehicle must,

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when transporting cargo on public roads, be loaded and equipped, and the cargo secured, in accordance with this subpart to prevent the cargo from leaking, spilling, blowing or falling from the motor vehicle.

(c) *Prevention against shifting of load.* Cargo must be contained, immobilized or secured in accordance with this subpart to prevent shifting upon or within the vehicle to such an extent that the vehicle's stability or maneuverability is adversely affected.

§ 393.102 What are the minimum performance criteria for cargo securement devices and systems?

(a) *Performance criteria—(1) Breaking strength.* Tiedown assemblies (including chains, wire rope, steel strapping, synthetic webbing, and cordage) and other attachment or fastening devices used to secure articles of cargo to, or in, commercial motor vehicles must be designed, installed, and maintained to ensure that the maximum forces acting on the devices or systems do not exceed the manufacturer's breaking strength rating under the following conditions, applied separately:

- (i) 0.8 g deceleration in the forward direction;
- (ii) 0.5 g acceleration in the rearward direction; and
- (iii) 0.5 g acceleration in a lateral direction.

(2) *Working Load limit.* Tiedown assemblies (including chains, wire rope, steel strapping, synthetic webbing, and cordage) and other attachment or fastening devices used to secure articles of cargo to, or in, commercial motor vehicles must be designed, installed, and maintained to ensure that the forces acting on the devices or systems do not exceed the working load limit for the devices under the following conditions, applied separately:

- (i) 0.435 g deceleration in the forward direction;
- (ii) 0.5 g acceleration in the rearward direction; and
- (iii) 0.25 g acceleration in a lateral direction.

(b) *Performance criteria for devices to prevent vertical movement of loads that are not contained within the structure of the vehicle.* Securement systems must provide a downward force equivalent to

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at least 20 percent of the weight of the article of cargo if the article is not fully contained within the structure of the vehicle. If the article is fully contained within the structure of the vehicle, it may be secured in accordance with § 393.106(b).

(c) *Equivalent means of securement.* The means of securing articles of cargo are considered to meet the performance requirements of this section if the cargo is:

(1) Immobilized, such so that it cannot shift or tip to the extent that the vehicle's stability or maneuverability is adversely affected; or

(2) Transported in a sided vehicle that has walls of adequate strength, such that each article of cargo within the vehicle is in contact with, or sufficiently close to a wall or other articles, so that it cannot shift or tip to the extent that the vehicle's stability or maneuverability is adversely affected; or

(3) Secured in accordance with the applicable requirements of §§ 393.104 through 393.136.

[71 FR 35832, June 22, 2006, as amended at 78 FR 58484, Sept. 24, 2013]

§ 393.104 What standards must cargo securement devices and systems meet in order to satisfy the requirements of this subpart?

(a) *General.* All devices and systems used to secure cargo to or within a vehicle must be capable of meeting the requirements of § 393.102.

(b) *Prohibition on the use of damaged securement devices.* All tiedowns, cargo securement systems, parts and components used to secure cargo must be in proper working order when used to perform that function with no damaged or weakened components, such as, but not limited to, cracks or cuts that will adversely affect their performance for cargo securement purposes, including reducing the working load limit.

(c) *Vehicle structures and anchor points.* Vehicle structures, floors, walls, decks, tiedown anchor points, headerboards, bulkheads, stakes, posts, and associated mounting pockets used to contain or secure articles of cargo must be strong enough to meet the performance criteria of § 393.102, with no damaged or weakened components, such as, but not limited to, cracks or